## AMENDMENT UNDER 37 C.F.R. § 1.111 US APPLN. NO. 09/831,509

6. (Twice Amended) The fluorine-containing rubber composition for crosslinking of Claim 2, wherein the fluorine-containing elastomer has a carboxylic acid group at both ends of a trunk chain as a crosslinkable group and is represented by the formula (I):

$$X^{1}-[A-(Y)_{p}]_{q}-X^{2}$$
 (I)

or the formula (II):

$$X^{1}-[A-(Y^{1})_{p}]_{q}-[B-(Y^{2})_{r}]_{s}-X^{2}$$
 (II)

wherein  $X^1$  and  $X^2$  are both a carboxylic acid group, Y,  $Y^1$  and  $Y^2$  are the same or different and each is a divalent organic group having a carboxylic acid group, an alkoxycarbonyl group, an iodine atom or a bromine atom at a side chain thereof, A is an elastomeric fluorine-containing polymer chain segment, B is a non-elastomeric fluorine-containing polymer chain segment, p is 0 or an integer of 1 to 10, q is an integer of 1 to 5, r is 0 or an integer of 1 to 10, s is an integer of 1 to 3, at least one of  $Y^1$  and  $Y^2$  is a divalent organic group having a carboxylic acid group, and  $Y^2$  is optionally contained at random in the segment A or B.

10. (Amended) A fluorine-containing elastomer which has a carboxylic acidgroup at an end of a trunk chain as a crosslinkable group and is represented by the formula (Ia):

$$X^{1}-[A-(Y)_{p}]_{q}-X^{2}$$
 (Ia)

or the formula (IIa):

$$X^{1}$$
-[A-( $Y^{1}$ )<sub>p</sub>]<sub>q</sub>-[B-( $Y^{2}$ )<sub>r</sub>]<sub>s</sub>- $X^{2}$  (IIa)

wherein  $X^1$  and  $X^2$  are both a carboxylic acid group, Y,  $Y^1$  and  $Y^2$  are the same or different and each is a divalent organic group having a carboxylic acid group, an alkoxycarbonyl group, an

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iodine atom or a bromine atom at a side chain thereof, A is an elastomeric fluorine-containing polymer chain segment, B is a non-elastomeric fluorine-containing polymer chain segment, p is 0 or an integer of 1 to 10, q is an integer of 1 to 5, r is 0 or an integer of 1 to 10, s is an integer of 1 to 3, at least one of  $Y^1$  and  $Y^2$  is a divalent organic group having a carboxylic acid group, and  $Y^2$  is optionally contained at random in the segment A or B.

12. (Twice Amended) The fluorine-containing elastomer of Claim 10, which satisfies the following equation (1):

$$(Sco/Scf) \times (D/2.03) \times (F/71.6) \square 0.01$$
 (1)

wherein Sco, Scf, D and F represent the following respective values;

CS

Sco: Total area of absorbances at the absorptions derived from carbonyl group of associated and non-associated carboxyl groups having the absorption peaks at from 1,680 to 1,830 cm<sup>-1</sup> when measurement is made with FT-IR with respect to the elastomer to be measured;

Scf: Area of absorbance at absorption derived from a harmonic sound of C-F bond having an absorption peak at from 2,220 to 2,840 cm<sup>-1</sup> when measurement is made with FT-IR with respect to the elastomer to be measured, and in the case where nitrile group is present, Scf is a value obtained by subtracting an area of absorbance at absorption derived from nitrile group having an absorption peak at from 2,220 to 2,300 cm<sup>-1</sup> from a total area of absorbances at whole absorption having a peak at from 2,220 to 2,840 cm<sup>-1</sup>;

D: Specific gravity of the aimed elastomer at 20°C; and

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F: Fluorine content (% by weight) of the elastomer to be measured obtained by elemental analysis.

18. (Amended) The fluorine-containing elastomer of Claim 11, which satisfies the following equation (1):

$$(Sco/Scf) \times (D/2.03) \times (F/71.6) \square 0.01$$
 (1)

wherein Sco, Scf, D and F represent the following respective values;



Sco: Total area of absorbances at the absorptions derived from carbonyl group of associated and non-associated carboxyl groups having the absorption peaks at from 1,680 to 1,830 cm<sup>-1</sup> when measurement is made with FT-IR with respect to the elastomer to be measured;

Scf: Area of absorbance at absorption derived from a harmonic sound of C-F bond having an absorption peak at from 2,220 to 2,840 cm<sup>-1</sup> when measurement is made with FT-IR with respect to the elastomer to be measured, and in the case where nitrile group is present, Scf is a value obtained by subtracting an area of absorbance at absorption derived from nitrile group having an absorption peak at from 2,220 to 2,300 cm<sup>-1</sup> from a total area of absorbances at whole absorption having a peak at from 2,220 to 2,840 cm<sup>-1</sup>;

D: Specific gravity of the aimed elastomer at 20°C; and

F: Fluorine content (% by weight) of the elastomer to be measured obtained by elemental analysis.